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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BAUGH, APRIL L

ART UNIT	PAPER NUMBER
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2141

DATE MAILED: 03/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/649,120

Applicant(s)

LAURENT ET AL.

Examiner

April L. Baugh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 54-92 is/are pending in the application.
- 4a) Of the above claim(s) 15-53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 54-92 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/21/05 has been entered.

Response to Amendment

Applicant canceled 15-53 and added new claims 54-92, therefore claims 54-92 are now pending.

Response to Arguments

2. Applicant's arguments with respect to claim 54-92 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 54-60, 62-68, 70-76, 78-84, and 86-92 rejected under 35 U.S.C. 102(e) as being unpatentable by US Patent 6,640,278 to Nolan et al.

Regarding claims 54, 62, and 70, Nolan et al. teaches a method, computer program product, and apparatus for managing a storage area network (SAN), the method comprising: defining storage domains respectively having associated configurable storage management properties that are separate from individual physical capabilities of physical storage resources available through the SAN (column 2, lines 34-35 and column 6, lines 13-19), wherein a first set of storage management properties is associated with a first storage domain and a second set of storage management properties is associated with a second storage domain, with the first set of storage management properties being different from the second set of storage management properties (column 2, lines 19-21 and column 34, lines 50-64); accommodating the creation of logical volumes configurable for presentation to hosts through the SAN (column 16, lines 19-25 and column 28, lines 16-17); and allocating the logical volumes to hosts in the context of the storage domains (column 2, lines 45-51 and 57-67 and column 6, lines 13-14 and column 10, lines 33-39), wherein allocating a first logical volume to a first host in the context of the first storage domain entails the provision of storage resources according to the first set of storage management properties and allocating a second volume to a second host in the context of the second storage domain entails the provision of storage resources according to the second set of storage management properties (column 2, lines 25-29 and column 5, lines 15-29).

Regarding claim 78, Nolan et al. teaches a storage area network (SAN) that accommodates presentation of logical volumes to hosts and associates access to storage with configurable storage management properties defined by a storage domain, the storage area

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network comprising: storage domains respectively defined to have associated configurable storage management properties that are separate from individual physical capabilities of physical storage resources available through the SAN (column 2, lines 34-35 and column 6, lines 13-19), wherein a first set of storage management properties is associated with a first storage domain and a second set of storage management properties is associated with a second storage domain, with the first set of storage management properties being different from the second set of storage management properties (column 2, lines 19-21 and column 34, lines 50-64); logical volumes configurable for presentation to hosts through the SAN (column 16, lines 19-25 and column 28, lines 16-17); and means for allocating the logical volumes to hosts in the context of the storage domains (column 2, lines 45-51 and 57-67 and column 6, lines 13-14 and column 10, lines 33-39), wherein allocating a first logical volume to a first host in the context of the first storage domain entails the provision of storage resources according to the first set of storage management properties and allocating a second volume to a second host in the context of the second storage domain entails the provision of storage resources according to the second set of storage management properties (column 2, lines 25-29 and column 5, lines 15-29).

Regarding claims 55, 63, 71, and 79, Nolan et al. teaches the method of claim 54, 62, 70, and 78, wherein presentation of logical volumes to hosts accommodates storage resource access by hosts without requiring hosts to be configured according to the requirements of the physical storage resources (column 10, lines 33-39 and column 33, lines 40-45).

Regarding claims 56, 64, 72, and 80, Nolan et al. teaches the method of claim 55, 63, 71, and 79, wherein the first logical volume and the second logical volume are a common logical volume (column 16, lines 19-25 and column 28, lines 16-17), with allocation of the common

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logical volume to the first host subject to the first set of storage management properties and allocation of the common logical volume to the second host subject to the second set of storage management properties (column 2, lines 25-29 and column 5, lines 15-29).

Regarding claims 57, 65, 73, and 81, Nolan et al. teaches the method of claim 54, 62, 70, and 78, wherein the storage management properties comprise a guaranteed storage capacity (column 33, lines 30-33 and column 35, lines 3-11).

Regarding claims 58, 66, 74, and 82, Nolan et al. teaches the method of claim 54, 62, 70, and 78, wherein the storage management properties comprise a guaranteed I/O properties that include an I/O bandwidth and/or an I/O operations (column 4, line 66-column 5, line 2 and column 35, lines 32-34).

Regarding claims 59, 67, 75, and 83, Nolan et al. teaches the method of claim 54, 62, 70, and 78, wherein the storage management properties comprise a guaranteed availability (column 2, lines 2-9 and column 3, lines 7-11).

Regarding claims 60, 68, 76, and 84, Nolan et al. teaches the method of claim 54, 62, 70, and 78, wherein the storage management properties comprise a guaranteed performance (column 2, lines 2-9 and column 3, lines 7-11).

Regarding claims 86, 88, 90, 91, Nolan et al. teaches the method of claim 56, 64, 70, and 80, wherein the first set of storage management properties includes a first class of service and the second set of storage management properties including a second class of service, whereby access of the common volume by the first and second hosts entails differing classes of service (column 16, lines 24-25 and table 2).

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Regarding claims 87, 89, and 92, Nolan et al. teaches the method of claim 54, 62, and 78, wherein the first and second sets of storage management properties are softly configured such that they are reconfigurable without requiring an update of the connections to the physical storage resources (column 2, lines 45-52 and column 33, lines 29).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 61, 69, 77, and 85 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,640,278 to Nolan et al. in view of Hubis et al.

Regarding claims 61, 69, 77, and 85, Nolan et al. teaches the method of claim 54, 62, 70, and 78 (column 2, lines 45-51 and 57-67 and column 6, lines 13-14 and column 10, lines 33-39).

Nolan et al. does not teach wherein the storage management properties comprise a guaranteed integrity. Hubis et al. teaches wherein the storage management properties comprise a guaranteed integrity (column 7, lines 46-51). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method for configuration of storage resources in a storage network by Nolan et al. by wherein the storage management properties comprise a guaranteed integrity because it is key that the storage systems maintain the integrity of the data stored within the logical volumes.

Conclusion


1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to using storage domains to control data in a SAN in general: Crane et al., Black, Harris, Markson et al., Tabuchi et al., Honma et al., Lumelsky et al., Blumenau et al., Duggan et al., Reuter et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to April L Baugh whose telephone number is 571-272-3877. The examiner can normally be reached on Monday-Friday 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ALB


RUPAL DHARIA
SUPERVISORY PATENT EXAMINER